

ABSTRACT OF THE DISCLOSURE

The invention provides a projection optical apparatus that is fast and of satisfactory illumination efficiency albeit being of simple construction and compact size by making use of a diffuse hologram that projects the exit pupil of a projection optical system onto a viewing position and magnifying the thus projected exit pupil image to a limited area. The apparatus comprises at least three projection optical systems 1R, 1G and 1B for magnifying and projecting an image appearing on a display device; and further comprises a concave mirror 2, 2' for projecting exit pupils 8R, 8G and 8B of the projection optical systems onto a viewer side and a diffusing plate 3 comprising a transmission hologram, which is located near to images projected through the projection optical systems for magnifying the images of the exit pupils 8R, 8G and 8B of the projection optical system upon projected by the concave mirror 2, 2'. The image 4' of the exit pupil of each projection optical system projected by the concave mirror and magnified through the diffusing plate comprising a transmission hologram is projected in a mutually, at least partially overlapping fashion.